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Please find below and/or attached an Office communication concerning this application or proceeding.

		JUK				
,	Application No.	Applicant(s)				
	09/771,474	SENTZ, DONALD R.				
Office Action Summary	Examiner	Art Unit				
	Randy Peaches	2686				
The MAILING DATE of this communication app Period for Reply	ears on the cover sheet with the	correspondence address				
A SHORTENED STATUTORY PERIOD FOR REPLY THE MAILING DATE OF THIS COMMUNICATION. - Extensions of time may be available under the provisions of 37 CFR 1.13 after SIX (6) MONTHS from the mailing date of this communication. - If the period for reply specified above is less than thirty (30) days, a reply If NO period for reply is specified above, the maximum statutory period w Failure to reply within the set or extended period for reply will, by statute, Any reply received by the Office later than three months after the mailing earned patent term adjustment. See 37 CFR 1.704(b). Status	36(a). In no event, however, may a reply be within the statutory minimum of thirty (30) dwill apply and will expire SIX (6) MONTHS fro cause the application to become ABANDON	timely filed ays will be considered timely. m the mailing date of this communication. IED (35 U.S.C. § 133).				
1) Responsive to communication(s) filed on	·					
2a) This action is FINAL . 2b) ⊠ Thi	is action is non-final.					
3) Since this application is in condition for alloward closed in accordance with the practice under a Disposition of Claims						
4)⊠ Claim(s) 1-11 is/are pending in the application						
4a) Of the above claim(s) is/are withdraw	4a) Of the above claim(s) is/are withdrawn from consideration.					
5) Claim(s) is/are allowed.						
6)⊠ Claim(s) <u>1-11</u> is/are rejected.	⊠ Claim(s) <u>1-11</u> is/are rejected.					
7) Claim(s) is/are objected to.						
8) Claim(s) are subject to restriction and/or	r election requirement.					
Application Papers						
9) The specification is objected to by the Examine	г.					
10) The drawing(s) filed on is/are: a) accept	oted or b) objected to by the Ex	aminer.				
Applicant may not request that any objection to the		• •				
11) The proposed drawing correction filed on	• • • • • • • • • • • • • • • • • • • •	roved by the Examiner.				
If approved, corrected drawings are required in rep	•					
12) The oath or declaration is objected to by the Exa	aminer.					
Priority under 35 U.S.C. §§ 119 and 120						
13) Acknowledgment is made of a claim for foreign	priority under 35 U.S.C. § 119	(a)-(d) or (f).				
a)☐ All b)☐ Some * c)☐ None of:						
 Certified copies of the priority documents 	s have been received.					
2. Certified copies of the priority documents	s have been received in Applica	ation No				
3. Copies of the certified copies of the prior application from the International But* See the attached detailed Office action for a list	reau (PCT Rule 17.2(a)).					
14) Acknowledgment is made of a claim for domestic	c priority under 35 U.S.C. § 119	(e) (to a provisional application).				
 a) The translation of the foreign language pro 15) Acknowledgment is made of a claim for domesting 	• •					
Attachment(s)						
1) Notice of References Cited (PTO-892) 2) Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s)	5) Notice of Informa	ary (PTO-413) Paper No(s) al Patent Application (PTO-152)				

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DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

Reference characters "506" and "510" have both been used to designate "demodulator". The number "506", on page 15 paragraph [0035], should be changed to "510".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 1-2, 4-5, 7-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Ayyagari (PN 6018659).

Regarding *claim 1*, Ayyagari teaches of a system (100), as exhibited in FIGURE 1, which reads on claimed "communication path processing system". Ayyagari discloses, as referenced in FIGURE 4, of a system (100) for a communication airborne vehicle (106), which reads on claimed "communication satellite", hereinafter referenced as AV (106), comprising of:

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an electronically steered phase array antenna (132), hereinafter referenced as PAA (132,134,136). See FIGURE 4, column 6 and 7 lines 13-15 and 10-11, respectively;

as referenced in FIGURE 17, column 15 lines 24-61, the said AV (106) contains two databases: Home Location Register (HLR) or equivalently a home agent (HA) AV (106) table and a Visitor Location Register (VLR) or equivalent a Foreign Agent (FA) AV (106) table, which reads on claimed "position memory", for storing and registering mobile unit (122) position, which reads on claimed "communication target", hereinafter referenced as MU (122);

a central processing unit (CPU)(130), which reads on claimed "processor", hereinafter referenced as CPU (130), is coupled to the said two databases. The said CPU (130) is operable to track and process said MU's (122) position after said MU (122) has initially registered its position with said AV (106). See column 9 lines 25-28. Additionally, as referenced in column 9 lines 25-50, the said AV (106) can either perform one of two tracking techniques, passive or active. Once a link between the said AV (106) and the said MU (122) is established, the said MU (122), as referenced in column 8 lines 55-57, can then transmit its current and updated location via an out-of-band order wire according to a predetermined access schedule. As taught by Sentz, the order-wire message access is generated by and transmitted by the communication satellite. The access message includes the uplink time for which the communication target may submit information to the said communication satellite; and

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as referenced in FIGURE 4 columns 5-7 line 67, lines 1-3, and lines 24-27 respectively, a phase controller, which reads on claimed "antenna controller", coupled to the said PAA (132,134,136) and to the said CPU (130); wherein the said CPU (130) generates steering control signals for the said PAA (132,134,136) in accordance to the information generated by the position mechanism (138) of the said PAA's (132,134,136) architecture.

Regarding *claim* **2**, Ayyagari teaches of a system (100), as exhibited in FIGURE 1, which reads on claimed "communication path processing system". Ayyagari discloses, as referenced in FIGURE 4, of a system (100) for a communication airborne vehicle (106), which reads on claimed "communication satellite", hereinafter referenced as AV (106), comprising of:

an electronically steered phase array antenna (132), hereinafter referenced as PAA (132,134,136). See FIGURE 4, column 6 and 7 lines 13-15 and 10-11, respectively;

as referenced in FIGURE 17, column 15 lines 24-61, the said AV (106) contains two databases: Home Location Register (HLR) or equivalently a home agent (HA) AV (106) table and a Visitor Location Register (VLR) or equivalent a Foreign Agent (FA) AV (106) table, which reads on claimed "position memory", for storing and registering mobile unit (122) position, which reads on claimed "communication target", hereinafter referenced as MU (122);

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a central processing unit (CPU) (130), which reads on claimed "processor", hereinafter referenced as CPU (130), is coupled to the said two databases. The said CPU (130) is operable to track and process said MU's (122) position after said MU (122) has initially registered its position with said AV (106). See column 9 lines 25-28. Additionally, as referenced in column 9 lines 25-50, the said AV (106) can either perform one of two tracking techniques, passive or active. Once a link between the said AV (106) and the said MU (122) is established, the said MU (122), as referenced in column 8 lines 55-57, can then transmit its current and updated location via an out-of-band order wire according to a predetermined access schedule. As taught by Sentz, the order-wire message access is generated by and transmitted by the communication satellite. The access message includes the uplink time for which the communication target may submit information to the said communication satellite; and

as referenced in FIGURE 4 columns 5-7 line 67, lines 1-3, and lines 24-27 respectively, a phase controller, which reads on claimed "antenna controller", coupled to the said PAA (132,134,136) and to the said CPU (130); wherein the said CPU (130) generates steering control signals for the said PAA (132,134,136) in accordance to the information generated by the position mechanism (138) of the said PAA's (132,134,136) architecture;

the said PAA (132,134,136) generating hopping beams or RF beams, which reads on claimed "beam spots", providing dedicated data links, as referenced in column 6-7 lines 65-67 and lines 1-2 respectively, to the said MU's (122). Additionally, as disclosed in column 6 lines 15-18, the said MU's (122) individually having control, which

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reads on claimed "exercising control", over the assigned hopping beam of the transmitting AV (106); which is slave to the MU's (122) tracked position, by generating the updated said MU's (122) positions. Ayyagari teaches in column 9 lines 25-43, of a passive tracking technique where the said AV's (106) receive hopping or RF beam is "stepped" around the said MU's (122) true position each time it is addressed in the TDMA cycle. While the "stepping" process is taking place, the said AV (106) updates and adjust accordingly to the MU's (122) position by comparing, as disclosed by Ayyagari in column 9 lines 37-43, a upper and lower hopping beam or RF beam threshold limits, wherein the said MU's (122) signal strength of the hopping beam or RF beam is analyzed below or above the set threshold limits. If the threshold conditions are met, the said AV (106) updates its said databases to include the new location of the tracked said MU (122).

Regarding *claim 4*, Ayyagari teaches of a system (100), as exhibited in FIGURE 1, which reads on claimed "communication path processing system". Ayyagari discloses, as referenced in FIGURE 4, of a system (100) for a communication airborne vehicle (106), which reads on claimed "communication satellite", hereinafter referenced as AV (106), comprising of:

an electronically steered phase array antenna (132), hereinafter referenced as PAA (132,134,136). See FIGURE 4, column 6 and 7 lines 13-15 and 10-11, respectively;

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as referenced in FIGURE 17, column 15 lines 24-61, the said AV (106) contains two databases: Home Location Register (HLR) or equivalently a home agent (HA) AV (106) table and a Visitor Location Register (VLR) or equivalent a Foreign Agent (FA) AV (106) table, which reads on claimed "position memory", for storing and registering mobile unit (122) position, which reads on claimed "communication target", hereinafter referenced as MU (122);

a central processing unit (CPU-130), which reads on claimed "processor", hereinafter referenced as CPU (130), is coupled to the said two databases. The said CPU (130) is operable to track and process said MU's (122) position after said MU (122) has initially registered its position with said AV (106). See column 9 lines 25-28. Additionally, as referenced in column 9 lines 25-50, the said AV (106) can either perform one of two tracking techniques, passive or active. Once a link between the said AV (106) and the said MU (122) is established, the said MU (122), as referenced in column 8 lines 55-57, can then transmit its current and updated location via an out-of-band order wire according to a predetermined access schedule. As taught by Sentz, the order-wire message access is generated by and transmitted by the communication satellite. The access message includes the uplink time for which the communication target may submit information to the said communication satellite;

as referenced in FIGURE 4 columns 5-7 line 67, lines 1-3, and lines 24-27 respectively, a phase controller, which reads on claimed "antenna controller", coupled to the said PAA (132,134,136) and to the said CPU (130); wherein the said CPU (130) generates steering control signals for the said PAA (132,134,136) in accordance to the

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information generated by the position mechanism (138) of the said PAA's (132,134,136) architecture;

Ayyagari teaches in column 2-3 lines 61-67 and lines 1-15 respectively, that a predetermined Time Division Access (TDMA) transmission scheme, which reads on claimed "access schedule", determines when the process of the transmitting and receiving of information, e.g. position update information, between the said AV (106) and said MU (122) shall occur;

the said PAA (132,134,136) generating hopping beams or RF beams, which reads on claimed "beam spots", providing dedicated data links, as referenced in column 6-7 lines 65-67 and lines 1-2 respectively, to the said MU's (122). Additionally, as disclosed in column 6 lines 15-18, the said MU's (122) individually having control, which reads on claimed "exercising control", over the assigned hopping beam of the transmitting said AV (106), which is slave to the said MU's (122) tracked position. The time that is allotted for information to be transmitted between the said AV (106) and said MU (122) is determined by the predetermined transmission scheme, which reads on claimed "access schedule". See column 2-3 lines 61-67 and lines 1-15 respectively.

Regarding *claim 5*, Ayyagari discloses of a method for providing broadband communication, which reads on claimed "communication bandwidth", with AV (106), which reads on claimed "communication satellite", the method comprising:

each said AV (106) is equipped with, as disclosed in column 15 lines 14-38, a mobility management functionality and hardware for wireless communication to the said

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MU's (122) once a connection is established in accordance to the process referenced in column 6 lines 26-44. The said AV (106) reads the said MU's (122) position, which reads on claimed "communication target" positions from the tables (HA or FA) contained in the two databases, which reads on claimed "position memory";

steering an electronically steered said PAA (132,134,136), which reads on claimed "antenna", in accordance with the said MU's (122), which reads on claimed "target", position;

receiving an updated said MU's (122) positions in an established uplink with either an active or passive scheme. See column 6 lines 57-64; and

in either active or passive tracking, which reads on claimed "tracking", of said MU's (122) position based on updated said MU's (122) positions, as referenced in column 15 lines 47-50.

Regarding *claim* 7, Ayyagari discloses of a method for providing broadband communication, which reads on claimed "communication bandwidth", with AV (106), which reads on claimed "communication satellite", the method comprising:

each said AV (106) is equipped with, as disclosed in column 15 lines 14-38, a mobility management functionality and hardware for wireless communication to the said MU's (122) once a connection is established in accordance to the process referenced in column 6 lines 26-44. The said AV (106) reads the said MU (122), which reads on claimed "communication target" positions from the tables (HA or FA) contained in the two databases, which reads on claimed "position memory";

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steering an electronically steered said PAA (132,134,136), which reads on claimed "antenna", in accordance with the said MU's (122), which reads on claimed "target", position;

receiving an updated said MU's (122) positions in an established uplink with either an active or passive scheme. See column 6 lines 57-64; and

in either active or passive tracking, as referenced in column 15 lines 47-50, which reads on claimed "tracking", of said MU's (122) position based on updated said MU's (122) positions, and steering in accordance with at least one data channel of a predetermined Time Division Multiplexed Access (TDMA) for said MU (122) as taught by Ayyagari in column 3 lines 3-10.

Regarding *claim 8*, Ayyagari teaches of a system (100), which reads on claimed "communication system", comprising:

a plurality of mobile geographical areas (109), which reads on the claimed "cells", including a first geographical area (109) assigned to a single first said MU (122) and a second geographical area (109) assigned to a single said MU (122);

as referenced in FIGURE 17, column 15 lines 24-61, the said AV (106) contains two databases: Home Location Register (HLR) or equivalently a home agent (HA) AV (106) table and a Visitor Location Register (VLR) or equivalent a Foreign Agent (FA) AV (106) table, which reads on claimed "position memory", for storing a first said geographical area (109) position determined by the first said MU (122) and associated with the first said geographical area (109) and a second said geographical area (109)

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determined by the second MU (122) and associated with the second geographical area (109);

an electrically steerable PAA (132,134,136), which reads on claimed "antenna", for generating the first geographical area (109) and the second geographical area (109) as referenced in FIGURE 2; and

a phase controller, which reads on claimed "antenna controller, coupled to the said PAA (132,134,136) and the said two databases, the said phase controller steering the said PAA (132,134,136), as taught by Ayyagari in column 7 lines 31-41, in accordance with a predetermined transmission scheme, which reads on claimed "access schedule. See column 3 lines 2-15.

Regarding *claim 9*, Ayyagari teaches of a system (100), which reads on claimed "communication system", comprising:

a plurality of mobile geographical areas (109), which reads on the claimed "cells", including a first geographical area (109) assigned to a single first said MU (122) and a second geographical area (109) assigned to a single said MU (122);

as referenced in FIGURE 17, column 15 lines 24-61, the said AV (106) contains two databases: Home Location Register (HLR) or equivalently a home agent (HA) AV (106) table and a Visitor Location Register (VLR) or equivalent a Foreign Agent (FA) AV (106) table, which reads on claimed "position memory", for storing a first said geographical area (109) position determined by the first said MU (122) and associated with the first said geographical area (109) and a second said geographical area (109)

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determined by the second MU (122) and associated with the second geographical area (109);

an electrically steerable PAA (132,134,136), which reads on claimed "antenna", for generating the first geographical area (109) and the second geographical area (109) as referenced in FIGURE 2; and

a phase controller, which reads on claimed "antenna controller, coupled to the said PAA (132,134,136) and the said two databases, the said phase controller steering the said PAA (132,134,136), as taught by Ayyagari in column 7 lines 31-41, in accordance with a predetermined transmission scheme, which reads on claimed "access schedule" (see column 3 lines 2-15), the said phase controller being further responsive to an updated first geographical area (109) position from the first said MU (122) to adjust (see column 9 line 42), which reads on claimed "steer", the said PAA (132,134,136) to the updated first said geographical area (109), the updated first said geographical area (109) position replacing the first said geographical area (109) position in the AV's (106) two databases, which reads on claimed "position memory". As referenced in, column 15 lines 24-61, where the said AV (106) contains two databases: Home Location Register (HLR) or equivalently a home agent (HA) AV (106) table and a Visitor Location Register (VLR) or equivalent a Foreign Agent (FA) AV (106) table. In regards to the position updating process performed by said MU's (122), Ayyagari teaches in column 9 lines 25-43, of a passive tracking technique where the said AV's (106) receive hopping or RF beam is "stepped" around the said MU's (122) true position each time it is addressed in the TDMA cycle. While the "stepping" process is taking

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place, the said AV (106) updates and adjust accordingly to the MU's (122) position by comparing, as disclosed by Ayyagari in column 9 lines 37-43, a upper and lower hopping beam or RF beam threshold limits, wherein the said MU's (122) signal strength of the hopping beam or RF beam is analyzed below or above the set threshold limits. If the threshold conditions are met, the said AV (106) updates its said databases to include the new location of the tracked said MU (122).

Regarding *claim 10*, the system (100), which reads on claimed "communication system", of *claim 9*, wherein the phase controller, which reads on claimed "antenna controller", is responsive to and updated second geographical area (109), which reads on claimed "cell", position from the second said MU (122) to adjust (see column 9 line 42), which reads on claimed "steer", the said PAA (132,134,136), to the updated second said geographical area (109), the updated second said geographical area (109) position replacing the second said geographical area (109) position in the AV's (106) database, which read on claimed "position memory".

Regarding *claim 11*, the system (100), which reads on claimed "communication system", of *claim 9*, wherein the predetermined access schedule, as taught by Ayyagari in FIGURE 15 column 7 lines 56-61, is a time division multiplexed access (TDMA) schedule.

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Claim Rejections - 35 USC § 103

- 4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
 - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
- 5. Claim 3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ayyagari (PN 6018659) in view of Agre (PN 5946618).

Regarding **claim 3**, Ayyagari discloses, as referenced in FIGURE 4, of a system (100) for a communication airborne vehicle (106), which reads on claimed "communication satellite", hereinafter referenced as AV (106), comprising of:

an electronically steered phase array antenna (132), hereinafter referenced as PAA (132,134,136). See FIGURE 4, column 6 and 7 lines 13-15 and 10-11, respectively;

as referenced in FIGURE 17, column 15 lines 24-61, the said AV (106) contains two databases: Home Location Register (HLR) or equivalently a home agent (HA) AV (106) table and a Visitor Location Register (VLR) or equivalent a Foreign Agent (FA) AV (106) table, which reads on claimed "position memory", for storing and registering mobile unit (122) position, which reads on claimed "communication target", hereinafter referenced as MU (122);

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a central processing unit (CPU-130), which reads on claimed "processor", hereinafter referenced as CPU (130), is coupled to the said two databases. The said CPU (130) is operable to track and process said MU's (122) position after said MU (122) has initially registered its position with said AV (106). See column 9 lines 25-28. Additionally, as referenced in column 9 lines 25-50, the said AV (106) can either perform one of two tracking techniques, passive or active. Once a link between the said AV (106) and the said MU (122) is established, the said MU (122), as referenced in column 8 lines 55-57, can then transmit its current and updated location via an out-of-band order wire according to a predetermined access schedule. As taught by Sentz, the order-wire message access is generated and transmitted by the communication satellite. The access message includes the uplink time for which the communication target may submit information to the said communication satellite; and

as referenced in FIGURE 4 columns 5-7 line 67, lines 1-3, and lines 24-27 respectively, a phase controller, which reads on claimed "antenna controller", coupled to the said PAA (132,134,136) and to the said CPU (130); wherein the said CPU (130) generates steering control signals for the said PAA (132,134,136) in accordance to the information generated by the position mechanism (138) of the said PAA's (132,134,136) architecture;

the said PAA (132,134,136) generating hopping beams or RF beams, which reads on claimed "beam spots", providing dedicated data links, as referenced in column 6-7 lines 65-67 and lines 1-2 respectively, to the said MU's (122). Additionally, as disclosed in column 6 lines 15-18, the said MU's (122) individually having control, which

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reads on claimed "exercising control", over the assigned hopping beam of the transmitting AV (106), which is slave to the MU's (122) tracked position, by generating the updated said MU's (122) positions. Ayyagari teaches in column 9 lines 25-43, of a passive tracking technique where the said AV's (106) receive hopping or RF beam is "stepped" around the said MU's (122) true position each time it is addressed in the TDMA cycle. While the "stepping" process is taking place, the said AV (106) updates and adjust accordingly to the MU's (122) position by comparing, as disclosed by Ayyagari in column 9 lines 37-43, a upper and lower hopping beam or RF beam threshold limits, wherein the said MU's (122) signal strength of the hopping beam or RF beam is analyzed below or above the set threshold limits. If the threshold conditions are met, the said AV (106) updates its said databases to include the new location of the tracked said MU (122).

Ayyagari does not disclose that the communication target position comprises latitude and longitude positions.

Agre teaches in column 13-14 lines 59-67 and lines 1-4 respectively, that subscriber units, which reads on claimed "communication target", can represent said subscriber unit's GPS-based position in any suitable manner including latitude and longitude components.

Therefore, at the time of the invention it would have been obvious to a person of ordinary skilled in the art to modify Ayyagari to include a method of representing said subscriber unit's position in longitude and latitude coordinates as taught by Agre, in

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order to accurately represent the terrestrial object's position for optimal communication with the celestial communication satellite.

Regarding **claim 6**, Ayyagari discloses the limitations of **claim 5**. Ayyagari does not disclose that, which reads on claimed "the receiving comprises receiving latitude and longitude positions".

Agre teaches in column 13-14 lines 59-67 and lines 1-4 respectively, that subscriber units, which reads on claimed "communication target", can represent said subscriber unit's GPS-based position in any suitable manner including latitude and longitude components.

Therefore, at the time of the invention it would have been obvious to a person of ordinary skilled in the art to modify Ayyagari to include a method of representing said subscriber unit's position in longitude and latitude coordinates as taught by Agre, in order to accurately represent the terrestrial object's position for optimal communication with the celestial communication satellite.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. **US 6,625,129 B1** – Demand Assigned Spatial Multiplexing in Satellite Communication Systems

b. **US 5,483,664** - Cellular Communication with Scheduled Handoffs

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c. **US 6,148,196** – Remote Control and Location System

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Randy Peaches whose telephone number is (703) 305-8993. The examiner can normally be reached on Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks Harold can be reached on (703) 308-5576. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-5576.

RP

NGUYEN T. VO PRIMARY EXAMINER

lgreyen10 11/24/03

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